What is claimed is:

1. A method for measuring distance and velocity at a plurality of objects using FMCW radar, in which:
- measurements (M1, M2, M3) are repeated cyclically using at least two different frequency ramps (12, 14, 30),
- in each measurement, the transmitted signal (f_s) is mixed with the received signal, and the spectrum (22, 24) of the mixed signal is recorded,
- in a matching procedure, the peaks that are in the spectra recorded for various ramps and that belong to the same object are allocated to each other, and the distances (d) and velocities (v) of the objects are calculated from the frequencies (f_1, f_2) of the peaks, and
- in a tracking procedure, the objects measured at various times are identified with one another on the basis of the consistency of their distance and velocity data, wherein
- each measuring cycle includes not more than three measurements (M1, M2; M3) with different frequency ramps (12, 14; 30),
- for each plausible combination of two peaks, of which one was recorded during a first measurement (M1) and the other was recorded during a second measurement (M2) of the same cycle, the distance and the velocity of one possible object represented by these peaks are calculated,
- the anticipated result of at least one further measurement (M1, M2; M3) is calculated from the distance and the velocity of the possible object, and
- the possible object is discarded if at least one anticipated result does not agree with the measured result.

2. The method as recited in Claim 1, wherein only two measurements (M1, M2) are performed in each measuring cycle, and the further measurement is a measurement in another measuring cycle.

3. The method as recited in Claim 2, wherein the anticipated result of the further measurement is the distance and/or the relative velocity of the object in the other measuring cycle.

4. The method as recited in Claim 2, wherein the anticipated result of the further measurement is the frequency of a peak in at least one spectrum, which was recorded in the other measuring cycle.

5. The method as recited in Claim 1, wherein three measurements (M1, M2, M3) are performed in each measuring cycle, and the further measurement is a third measurement (M3), in which the modulation duration (T3) of the frequency ramp (30) is greater than for the first and second measurements (M1, M2).

6. The method as recited in Claim 5, wherein the anticipated result of the further measurement (M3) is the frequency of a peak in the spectrum, which is recorded in this measurement.

7. The method as recited in Claim 5 or 6, wherein an anticipated result is also calculated for the first and second measurement (M1, M2) in another measuring cycle and compared to the actual result.

8. The method as recited in one of the preceding claims, wherein the comparison with the results of the further measurements is carried out for a plurality of successive measuring cycles.

9. The method as recited in Claim 8, wherein each object is assigned a plausibility parameter which is increased when the anticipated result agrees with a measured result from another measuring cycle, and which is reduced when the anticipated result does not agree with any of the measured results, and the object is only discarded when the plausibility parameter drops below a predefined threshold value.